Software Quality Critical Design Review (CDR) Checklist

Date(s) of Assessment: _____ Project: _____

Assessor(s): _____ Review Examined: _____

_____ _____

		Y, N, NA	F, O	Comments
REVIEW PREPARATION				
1	Have standards been identified to clearly define the review process?			
2	Were guidelines used to prepare for the review?			
3	Has the project submitted any request for deviations or waivers to the defined process?			
4	Have entrance and exit criteria been established for the review?			
5	Was an agenda prepared and distributed in advance of the review?			
6	Was the review package provided with ample time to review?			
7	Were the appropriate stakeholders in attendance?			
REVIEW CONTENT				
8	Were the goals of the review and any review prerequisites provided?			
9	Was the review process addressed, including the method for capturing Requests for Action (RFAs), risks, or issues?			
10	Was an overview of the software project/system provided (e.g., mission goals, key functionality, operational characteristics)?			
11	Is the Organization/Work Breakdown Structure (WBS)/Project relationship presented?			
12	Is status included on action items from the Preliminary Design Review (PDR)?			
13	Is IV & V status provided?			
14	Are milestones, software builds, and schedules presented?			

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15	Have budget and schedule impacts been presented?			
CDR OBJECTIVES				
16	Does the CDR reflect that all elements of the design are compliant with functional and performance requirements?			
17	Does the CDR reflect that the verification approach is viable and will confirm compliance with all requirements?			
18	Does the CDR reflect that risks have been appropriately identified and mitigated or are on track for timely mitigation?			
19	Does the CDR reflect that the design is sufficiently mature to proceed with full-scale development?			
20	Does the CDR reflect that the management processes used by the project team are sufficient to develop and operate the mission?			
21	Does the CDR reflect that the schedule and cost estimates indicate that the mission will be ready to launch and operate on time and within budget and that the control processes are adequate to ensure remaining within allocated resources?			
REQUIREMENTS				
22	Do the requirements flow down and are they traceable?			
23	Have remaining “To Be Determined” (TBD) requirements been resolved?			
24	Did the review package include an overview of changes, additions, and/or deletions to the requirements since PDR?			
25	Are updates to the interface descriptions presented (both internal and external)?			

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26	Has the Verification Matrix been updated to reflect all requirement changes since PDR?			
DETAILED DESIGN				
27	Does a complete definition of the entire design exist?			
28	Has the design been elaborated in baseline diagrams to a sufficient level of detail?			
29	Are detailed logic flow diagrams presented?			
30	Are detailed data flow diagrams presented?			
31	Has code reuse or heritage software been addressed, if necessary?			
32	Does the design meet all the applicable software safety requirements?			
33	Are updates to the estimates of flight resource usage: Central Processing Unit (CPU), memory, databases, and data storage presented?			
34	Are updates to the operations scenarios presented?			
35	Have any IT Security features or issues been addressed?			
36	Is the detailed design under formal CM control?			
SOFTWARE TESTING				
37	Have the roles of the test team members been addressed?			
38	Has the test documentation been addressed – titles and status of test plan, procedures, and traceability matrices?			
39	Are Software Test Scenarios consistent with the Software Test Plan?			
40	Have the various test levels (unit testing, integration testing, system testing) been addressed?			
41	Have the various builds/releases and test timelines been addressed?			

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42	Has the test environment been addressed?			
43	Has the acceptance process been addressed?			
44	Are drivers/simulators to be used for testing presented?			
45	Are there adequate resources such as hardware and personnel for testing?			
46	Is there evidence that peer reviews have been conducted for each software unit and test scenarios?			
47	Is a summary status of peer review activities and action items presented?			
DELIVERY, INSTALLATION, and MAINTENANCE				
48	Has the delivery process been addressed – source code, tools, version identification, documentation, databases?			
SOFTWARE STATUS				
49	Has the current software size estimate been addressed?			
50	Has the current schedule been addressed including milestones?			
51	Has staffing and the current cost/effort status been addressed?			
RISKS				
52	Are technical risks, mitigation plans, and issues documented with plans for tracking and closure?			
SOFTWARE DOCUMENTATION STATUS				
53	Does the review package include the following approved documents:			
53a	Software Requirements Document (updated)			
53b	Software Interface Requirements Document (updated)			
53c	Software Test Plan (updated)			
53d	Software Design Document (updated)			
53e	Software Test Procedures (draft)			
53f	Software Users Manual (draft)			
POST REVIEW ACTIVITIES				

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54	At the conclusion of the review is a technical understanding reached on the validity and degree of completeness of:			
55	System/subsystem specification?			
56	The engineering design/cost of the system?			
57	Did all designated parties concur in the acceptability of the CDR?			
58	Are there any risks, issues, or request for actions (RFAs) that require follow-up?			
59	Is there a process in place for reviewing and tracking the closure of risks, issues, or RFAs?			
60	Have all artifacts been placed under formal configuration control (e.g., review packages)?			
61	Were Lessons Learned addressed and captured?			

REFERENCE ITEMS/DOCUMENTS
Information Systems Division (ISD) Checklist 580-CK-009-01, Software Contents of the Mission-Level Critical Design Review (CDR)
Information Systems Division (ISD) Checklist 580-CK-008-01, Contents of the Software Critical Design Review (CDR)
BK Draft CDR Guidelines, GSFC System Management Office, Design Review Guidelines-CDR
NASA Software Safety Guidebook NASA-GB-8719.13, Section 7.5.2.1
IEEE Standard for Software Reviews, IEEE Std 1028-1997

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COMMENTS PAGE _____ of _____

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